OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

TO : Distribution

DATE: 10 JUN 1968

FROM : MA/Apollo Program Director

SUBJECT: Cancellation of an Apollo Program Directive (APD)

Effective this date the following APD is cancelled and is to be removed from official files.

No.	Title
24	Apollo Flight Mission Assignment, Apollo-Uprated Saturn I Mission AS-207/209

Samuel C. Phillips
Lt. General, USAF

8010-106

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CANCELLED
6-10-68

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UNCLASSIFIED

APOLLO PROGRAM DIRECTIVE

NO. 24

JAN 10 1967

APOLLO FLIGHT MISSION ASSIGNMENTS,

APOLLO-UPRATED SATURN I MISSION AS-207/209 (1b)

DECEMBER 20, 1966

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OFFICE OF MANNED SPACE FLIGHT PROGRAM DIRECTIVE	M-D MA 1400.054 (Project)	DATE December 20, 1966

APOLLO PROGRAM DIRECTIVE NO. 24
MA009-024-1A

TO: Distribution

FROM: Samuel C. Phillips
APOLLO PROGRAM DIRECTOR

SUBJECT: Apollo Flight Mission Assignments, Apollo-Uprated Saturn I Mission AS-207/209

ACTION: Cognizant Centers are to incorporate the requirements of this directive into mission planning for the Apollo flight program.

REFERENCE: Apollo Flight Mission Assignments Directive SE 010-000-1, dated November, 1966 (CONFIDENTIAL).

I. PURPOSE

This directive establishes additional requirements for Apollo-Uprated Saturn I dual mission AS-207/209. It does not supersede, or revoke, any part of the reference.

II. SCOPE

The attachment to this directive defines additional requirements for mission AS-207/209. The attachment constitutes an additional Appendix to the referenced directive until a revised edition of the referenced directive is issued.

III. RESPONSIBILITY

Apollo Program Managers are responsible for implementation of the requirements of this directive.

Attachment:
Appendix AS-207/209 (CONFIDENTIAL)

Group 4

~~CONFIDENTIAL~~

MISSION AS-207/209 UNCLASSIFIED

I. MISSION TYPE:

CSM-LM Operations

II. PRIMARY OBJECTIVES:

1. Demonstrate Block II CSM/LM/crew operation in earth orbit, including:

   a) Closed-loop CSM/S-IVB attitude control.
   b) Extravehicular astronaut activity.

2. Demonstrate spacecraft/crew/ground support facilities performance during simulations of selected LOR mission activities, including:

   a) LM descent.
   b) LM staging.
   c) LM ascent.
   d) Rendezvous and docking.
   e) Transearth injection.

3. Flight and ground crew experience and training.

III. MISSION PROFILE:

Insertion of CSM Into Circular Orbit: Ground commands will be sent to the S-IVB/IU after CSM separation to exercise the launch vehicle command and control capability.

Insertion of LM Into Circular Orbit: LM launch and insertion will nominally follow the CSM launch by approximately 24 hours. The nosecone will be jettisoned following orbit insertion.

CSM Active Rendezvous and Dock with LM: The CSM will rendezvous and dock with the LM/S-IVB, and will perform LM extraction from the S-IVB within seven and one-half hours after LM launch.

Orbital Operations: Selected LOR mission activities will be performed, approximating portions of the lunar mission sequence and time line. EVA will be demonstrated. CSM and LM orbits throughout the orbital operations phase will not exceed 300 n. mi. altitude.

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CSM De-Orbit: The SM propulsion system will perform the nominal de-orbit burn. Entry will be under control of the Guidance and Navigation System.

IV. CONFIGURATION:

The uprated Saturn I 207 launch vehicle stages and components will be the operational configuration with the exception that engine thrust is not at the operational level in the S-IVB stage. The spacecraft Command and Service Modules will be the operational Block II configuration with the exceptions that R&D instrumentation is added and that no scientific equipment will be carried. The Launch Escape System and the Adapter will be the operational configuration. A tie-bar will replace the Lunar Module in the Adapter. A TV camera will be carried in the Command Module.

The uprated Saturn I 209 launch vehicle stages and components will be the operational configuration. The Lunar Module will be the operational configuration except for the addition of R&D instrumentation and a Digital Command Assembly. The Adapter will be the operational configuration except for the addition of R&D instrumentation. A nosecone will replace the Command and Service Modules.

V. EXPERIMENTS AND OPERATIONAL TESTS:

No operational tests will be performed on this mission. All in-flight experiments are assigned to vehicle 207. The following priority sequence shall be used as a guide in both pre-flight and real-time decisions:

D-017 Carbon Dioxide Reduction

T-002 Manual Navigation Sightings

VI. REAL-TIME ALTERNATES:

One S-IB Engine Out (207): In the event that one engine is shut down after approximately 65 seconds during the first stage burn, the launch vehicle will continue with seven S-IB engines plus the S-IVB to orbit.

S-IVB Early Shutdown (207): If the S-IVB stage is shut down during the last fifteen seconds of flight, the CSM will use the Service Propulsion System to orbit.

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S-IB Engine(s) Out (209): In the event one engine is shut down after approximately 25 seconds during first stage burn, the launch vehicle will continue with seven S-IB engines plus S-IVB to orbit. If a second engine is shut down, an attempt will be made to continue the launch, even at the risk of structural break-up.

CSM Only, No LM Rendezvous: If the LM fails to achieve orbit or if the CSM fails to extract the LM, the mission will continue, carrying out those planned activities for which a LM is not required.